

EDINBURGH TRAM NETWORK

**Edinburgh Tram
Lines 1 and 2**

**Code of Construction
Practice**

06 March 2006



tramtime

on route to a 21st century travel system

Edinburgh Tram Lines 1 and 2 Code of Construction Practice

06 March 2006

Report No. 203011/0124

Issue and Revision Record

Rev	Date	Originator	Checker	Approver	Description
A	10 03 2005	J. Ship	S. McIntosh	A. J. Oldfield	Draft for consultation
B	17 05 2005	J. Ship	S. McIntosh	A. J. Oldfield	For adoption by tie as policy
C	21 07 2005	S. McIntosh	I. MacKenzie	G. J. Turner	Update for consultation
D	06 03 2006	S. McIntosh	G. J. Turner	G. J. Turner	For Parliamentary Approval

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Mott MacDonald being obtained. Mott MacDonald accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person using or relying on the document for such other purpose agrees, and will by such use or reliance be taken to confirm his agreement, to indemnify Mott MacDonald for all loss or damage resulting therefrom. Mott MacDonald accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned.

To the extent that this report is based on information supplied by other parties, Mott MacDonald accepts no liability for any loss or damage suffered by the client, whether contractual or tortious, stemming from any conclusions based on data supplied by parties other than Mott MacDonald and used by Mott MacDonald in preparing this report.

Edinburgh Tram Lines 1 and 2 Code of Construction Practice

06 March 2006

Report No. 203011/0124

Issue and Revision Record

Rev	Date	Originator	Checker	Approver	Description
A	10 03 2005	J. Ship	S. McIntosh	A. J. Oldfield	Draft for consultation
B	17 05 2005	J. Ship	S. McIntosh	A. J. Oldfield	For adoption by tie as policy
C	21 07 2005	S. McIntosh	I. MacKenzie	G. J. Turner	Update for consultation
D	06 03 2006	S. McIntosh	G. J. Turner	G. J. Turner	For Parliamentary Approval

This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Mott MacDonald being obtained. Mott MacDonald accepts no responsibility or liability for the consequences of this document being used for a purpose other than the purposes for which it was commissioned. Any person using or relying on the document for such other purpose agrees, and will by such use or reliance be taken to confirm his agreement, to indemnify Mott MacDonald for all loss or damage resulting therefrom. Mott MacDonald accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned.

To the extent that this report is based on information supplied by other parties, Mott MacDonald accepts no liability for any loss or damage suffered by the client, whether contractual or tortious, stemming from any conclusions based on data supplied by parties other than Mott MacDonald and used by Mott MacDonald in preparing this report.

Contents

	Page	
1	Preface	3
1.1	The Project	3
1.2	Purpose of the Code of Construction Practice	3
1.3	Compliance with Applicable Legislation, Codes and Standards, Etc	3
1.4	The Site	4
1.5	Environmental Management System	4
2	Liaison and public information	5
2.1	Information Centre and Website	5
2.2	Weekly newsletter	5
2.3	Complaints Hotline	5
2.4	Contacts Log	6
2.5	Communications Regarding Noise	6
2.6	Staff identification	6
3	Hours of Working	7
4	Site arrangements	8
4.1	Site Housekeeping	8
4.2	Fencing and Hoardings	8
4.3	Access and Loading	10
4.4	Security	10
4.5	Living Accommodation	10
4.6	Clearance of Site on Completion	10
4.7	Pest Control	10
5	Roads, Footpaths, Cycleways and Bridleways	11
5.1	General	11
5.2	Temporary Road Closures and Diversions	11
5.3	Parking Provision for Construction Traffic	12
5.4	Pedestrian and Cycle Routes and Bridleways	12
5.5	Maintenance and Repair of the Road	13
5.6	Existing Street Furniture	13
5.7	Lorry Movements and Access to sites	14
5.8	Mud on Roads	14
5.9	Provision, Erection and Maintenance of Traffic Safety and Control (Traffic Safety Measures)	15
5.10	Implementation of the Closure of Roads and Access to Frontages	15
5.11	Access for Emergency Vehicles	15

6	Noise	16
	6.1 Noise Control	16
7	Vibration	18
	7.1 Vibration Control	18
	7.2 Inspection of Buildings and Other Structures	18
8	Dust and Air Pollution	20
	8.1 Dust and Other Air Pollution	20
9	Disposal of Waste and Contaminated Materials	21
	9.1 Waste	21
	9.2 Contaminated Land and Materials	21
10	Protection of the Water Environment	23
	10.1 Waste Water and Run-off	23
	10.2 Storage of Polluting Materials	24
	10.3 Protection of Aquifers	24
	10.4 Control and Management of Foul Drainage	24
	10.5 Works in the Vicinity of Water	24
	10.6 Guidance	25
	10.7 Water Environment and Water Services (Scotland) Act 2003	25
11	Ecology	26
	11.1 Encroachment into Wildlife Areas	26
	11.2 Protected Species	26
	11.3 Protection of Mature Trees	27
	11.4 Tree Replacement	28
	11.5 Control of Invasive and Alien Species	28
12	Archaeology and Cultural Heritage	29
	12.1 Archaeological and Heritage Mitigation Plan	29
	12.2 Guidance	30

Note:

For the avoidance of doubt;

1) this Code will only come into effect should the Edinburgh Tram Bill receive Royal Assent

2) wherever the term 'the Contractor' is used in this document 'the Contractor' is to be taken to include the principal contractor(s), sub-contractors, agents, representatives and employees.

3) tie have stated that "The provisions of the code will form part of the Contract for the construction of the Edinburgh Tram i.e. the successful Contractor will be required to comply fully with the code. It should be noted that public interests are also protected by Scottish, UK and EU legislation".

4) The term 'Best Practicable Means' is defined in Section 72 of the Control of Pollution Act where '...practicable' means reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to the financial implications'. The test of Best Practicable Means has been tested in a substantial body of case law relating to statutory nuisance from construction works. It is for this reason that it provides a clear and appropriate test against which to ensure that adequate noise and vibration measures are adopted during the construction phase.

1 Preface

1.1 The Project

Generally speaking the routes for the Edinburgh Tram are as follows;

- Edinburgh Tram Line 1: A loop joining the City Centre with Leith, Granton, Craighleith and Haymarket.
- Edinburgh Tram Line 2: Joint use of the section of tramway in St Andrew Square, Princes Street, Shandwick Place, and Haymarket and a branch from Line 1 running westward from a junction near Haymarket Yards to serve areas of west Edinburgh.

1.2 Purpose of the Code of Construction Practice

The purpose of this Code of Construction Practice (the CoCP) is to define the policy of the promoters in relation to the minimum standards of construction practice in so far as they affect the environment, amenity and safety of local residents, businesses, the general public and the physical surroundings and the natural and cultural heritage in the vicinity of proposed works.

The views of The City of Edinburgh Council as promoters of the Edinburgh Tram and with the statutory environmental bodies the Scottish Environment Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Historic Scotland (HS) have all been incorporated in this Code.

The Code draws on similar codes produced for other light rail and similar schemes in the UK, and covers specific legislative requirements as well as general requirements and compliance with current Standards.

tie intends that the provisions of the Code will be incorporated in the contract(s) for the construction of the Edinburgh Tram. The Contractor will be required to comply fully with the terms of the Code. Contractual provision will be made for auditing compliance and rectifying any breaches of the Code during construction.

tie will establish an appropriate person ('the Client Representative') to ensure compliance with the Code by all contracting parties. The City of Edinburgh Council will establish an appropriate person ('the Nominated City Officer') to monitor compliance with the Code by all contracting parties.

In this Code, 'construction' includes all site preparation, demolition, materials delivery, spoil disposal, materials and waste removal and all engineering, construction and commissioning activities. This Code will apply throughout the construction, testing and commissioning period

Any major advanced works carried out by or on behalf of **tie** or The City of Edinburgh Council in advance of the appointment of the Contractor and any other works carried out by or on behalf of **tie** or The City of Edinburgh Council in relation to the construction of the Edinburgh Tram shall also be covered by the requirements of this code.

1.3 Compliance with Applicable Legislation, Codes and Standards, Etc

Compliance with this Code will not absolve the Contractor from compliance with all legislation, Codes and Standards relating to construction. The Contractor shall be responsible for ensuring that the current versions of all legislation, Codes and Standards are complied with. Wherever this Code makes reference to any Legislation, Standards or Codes it shall be the Contractor's responsibility to ensure that the current versions are used at all times. It is the contractor's responsibility to ensure that the

current versions of all legislation, byelaws, standards and guidance are complied with. The Contractor shall fully comply with all relevant Legislation, Codes, Standards and the general guidance from the Health and Safety Executive and HM Railways Inspectorate.

1.4 The Site

The Site, for the purposes of this Code, is defined as the land occupied by Contractor within limits of deviation shown on the deposited plans and sections annexed to the **Edinburgh Tram Acts of the Scottish Parliament** together with all other areas listed in the Edinburgh Tram Acts as being required either temporary or permanently for the purposes of construction of the Edinburgh tram system.

The site may be divided into a number of active working areas at any time. Within these working areas the provisions of this Code shall apply for such periods as each working area is being used for construction and is not available for –and restored to – its previous or future use as appropriate.

1.5 Environmental Management System

The Contractor will implement an Environmental Management System in accordance with ISO 14001

1.6 The Role of the City of Edinburgh Council

The City of Edinburgh of Council shall ensure that in the case of any breach of which it becomes aware and in respect of which it can enforce, it shall take such action as is necessary to ensure that such breach is remedied as soon as reasonable practicable to procure compliance with this Code.

In respect of any breach which is enforceable by any other statutory or other body, the City of Edinburgh Council shall alert the relevant body as soon as reasonable practicable after it becomes aware of such a breach so that that body can take such action in order to procure compliance with this Code.

The Director of City Development of the City of Edinburgh Council will nominate a suitably qualified person ('the Nominated City Officer') to be the liaison officer between the Council and the Contractor.

The name of the Nominated City Officer and his/her contact details will be published on the City of Edinburgh website and in appropriate printed publicity material produced by the Council. The Nominated City Officer will publish on the Council website and in other places as appropriate at least once per calendar month a Note of any breaches of this Code of Construction Practice occurring within the previous month, setting out;

- the nature of the breach
- the duration of the breach,
- the action taken by the Contractor or the City of Edinburgh Council to mitigate the breach
- steps taken to minimise the likelihood of a subsequent occurrence of the breach
- any contractual penalty imposed upon the Contractor as a result of the breach.

2 Liaison and public information

The Contractor shall appoint a liaison officer to manage all public relations, information and press related matters, who shall liaise with **tie**, The City of Edinburgh Council, other statutory bodies, members of the public, press and the media on all matters relating to the works.

- The Nominated City Officer will be the single point of contact between the City of Edinburgh Council and the Contractor's liaison officer and all letters and communications to any Department, section or office of the City of Edinburgh Council shall be directed via the Nominated City Officer.

2.1 Information Centre and Website

The Contractor shall provide and maintain an Information Centre at a location to be agreed with **tie** and the City of Edinburgh Council. The Information Centre shall be accessible to stakeholders, frontagers, interested third parties and the general public, between the hours of 0900 and 1700, Monday to Friday (excluding local and national Public Holidays). Up to date information on the progress of the works and the current areas affected by construction shall be freely available at the Information Centre. The Contractor shall also provide and maintain a website which shall provide the same information and shall include details of any incidents and accidents attributed to the construction of tram works.

2.2 Weekly newsletter

The Contractor shall publish a weekly newsletter every Wednesday, detailing works to be undertaken in the forthcoming week and outlining, with appropriate maps and diagrams, any alterations to road traffic circulation patterns required by the coming week's works. This newsletter will be published;

- on the Website,
- by Fax and email to; local and national newspapers and other news media, The City of Edinburgh Council, Lothian and Borders Police, the emergency services and to any other persons or organisations that have requested receipt of the newsletter.

Sufficient free-distribution, take-away hard copies of the newsletter shall be placed in the Information Centre by 0800 every Thursday morning. No charge will be made for this service.

2.3 Complaints Hotline

The Contractor shall also provide and maintain a Freephone Hotline to deal with any complaints, comments or queries received in connection with the Edinburgh Tram Works. The Hotline will be answered by the Liaison Officer, a deputy or by another designated competent operator between the hours of 0700 and one hour after work terminates for the day, on every day when construction work is being undertaken. Outwith these hours an automated call recording service will be provided. The telephone number, fax number and website address of the hotline shall be publicised through the press and the Weekly newsletter and clearly displayed on hoardings around every worksite and at other suitable locations within and in the vicinity of every worksite.

2.4 Contacts Log

All complaints, comments and queries received shall be registered in a suitable Log and appropriate action in response instigated within 24 hours by the Contractor. A record of remedial action shall be logged, in the event of a complaint a follow up letter or electronic communication shall be passed to the complainant within 48 hours of the initial complaint, outlining their complaint and the remedial action being undertaken by the Contractor. All comments, questions and complaints shall be logged in writing together with any response and a record of any actions taken, including a record of the time when that action is completed. An up to date copy of the Contacts Log shall be compiled daily, together with a report on the progress of any actions. The Contacts Log shall be inspected and signed daily by a nominated senior representative of the Contractor and shall be counter signed by the Contractor's Project Director at least once per week. The Contractor's Project Director shall write a report to **tie** and the Nominated City Officer at least once per month a list of any breaches of this Code of Construction Practice occurring within the previous month, setting out;

- the nature of the breach
- the duration of the breach,
- the action taken by the Contractor to mitigate the breach
- steps taken to minimise the likelihood of a subsequent occurrence of the breach

A copy of each week's Contacts Log shall be placed every Friday in the Information Centre, where it will remain until completion of all construction works. Any person, including representatives of **tie** and the Nominated City Officer, may freely inspect all deposited copies of the Contacts Log during the normal opening hours of the Information Centre.

Additional copies of the Contacts Log shall be forwarded to **tie** and the Nominated City Officer as defined in the first paragraph of this section, once per week. The master register shall be available for **tie** and the Nominated City Officer to inspect at any other time during normal working hours.

2.5 Communications Regarding Noise

- (a) The Contractor shall give seven days notice to local residents who may be adversely affected by noise from the proposed programme of work, providing a description of the work to be carried out, measures that will be taken to control noise or other disturbance, and the proposed hours of working.
- (b) The Contractor shall provide the Nominated City Officer and City of Edinburgh Council Department of Environmental and Consumer Services with a list of contacts who will be responsible for investigating and resolving noise issues during the construction phase of the project.

2.6 Staff identification

The Contractor shall ensure that all site construction staff are easily identifiable to the public by use of identity cards or an other equally effective system.

3 Hours of Working

- (a) Normal hours of working for construction of Edinburgh Tram Lines One and Two shall be:
- | | |
|-----------------|--------------------|
| Monday – Friday | 0700 – 1900 hours. |
| Saturday | 0800 – 1300 hours. |
- (b) These hours of work shall not apply to equipment which is required to operate continuously (e.g. for safety or environmental reasons) or to work undertaken within fully enclosed areas such as buildings.
- (c) In certain circumstances work outwith these hours may be undertaken with the prior approval of tie and The City of Edinburgh Council. These circumstances may include:-
- (i) Sunday and evening/night working on public roads and in the vicinity of the railway network, where such working is required to minimise disruption to other traffic; or
 - (ii) where, through consultation with local residents and businesses adjacent to the proposed works to be undertaken outwith the normal hours of working, it is deemed by the Contractor acting reasonably and having due and proper regard to the said consultation to be less disruptive to those businesses and residents by having the Contractor working extended hours outwith the normal hours of working, or
 - (iii) where works are taking place in areas where there are no residents adjacent to the proposed works
- Application for prior approval must be made at least two weeks in advance.
- (d) Where Sunday or evening/night working has the potential to disturb nearby land users and occupiers they shall be notified seven days in advance, providing a description of the work to be carried out, measures that will be taken to control noise or other disturbance and the proposed hours of working.

4 Site arrangements

4.1 Site Housekeeping

- (a) A 'good housekeeping' policy shall be applied at all times. This shall include, but not necessarily be limited to, the following requirements:
- (i) all working areas shall be kept in a clean and tidy condition;
 - (ii) all working areas shall be a no-smoking area. Specific areas within the site shall be designated as smoking areas and shall be equipped with containers for smoking waste. These shall not be located at the boundary of the site adjacent to neighbouring land;
 - (iii) open fires shall be prohibited at all times;
 - (iv) all necessary measures shall be taken to minimise the risk of fire and the Contractor shall comply with the requirements of the local fire authority;
 - (v) radios (other than two-way radios used for the purposes of communication related to the works) and other forms of audio equipment shall not be operated on any work site;
 - (vi) any waste susceptible to spreading by wind or liable to cause litter shall be stored in enclosed containers;
 - (vii) rubbish shall be removed at frequent intervals and the site kept clean and tidy;
 - (viii) hoardings shall be frequently inspected, repaired and re-painted as necessary;
 - (ix) adequate toilet facilities shall be provided for all site staff;
 - (x) food waste shall be removed frequently;
 - (xi) wheel washing areas shall be brushed clean frequently.
- (b) The Contractor shall inspect all working areas weekly and shall provide a monthly written report on compliance with this section of the Code to **tie**. A nominated representative of **tie** may carry out inspections of the site at any time without prior notice of time and place of the inspections. Access to all areas of the works shall be given to visiting inspectors and the Contractor shall give inspectors all reasonable assistance during their site inspection.

4.2 Fencing and Hoardings

- (a) The Contractor shall ensure that all working areas are sufficiently and adequately fenced off from members of the public and to prevent animals from straying on to working area. Hoardings shall be provided to suit the location but may be:
- (i) A wire mesh fence, where appropriate for minimum security needs, or

-
- (ii) A 2.4 m minimum height, plywood faced, timber framed boundary hoarding, of a surface density of not less than 7kg/m² or other hoarding providing equivalent security and noise attenuation, in the vicinity of noise sensitive neighbours, or
 - (iii) Or other designs where a particular appearance or acoustic rating is considered to be required and is agreed with The City of Edinburgh Council.
- (b) Hoardings that create poorly-lit pedestrian routes shall have bulkhead lights fitted and these shall be illuminated in hours of darkness.
 - (c) The location and design of site boundaries, hoarding and temporary structures on the public road shall permit adequate visibility at junctions and proper forward visibility along the roads in accordance with the National Roads Directorate advice notes and the requirements of The City of Edinburgh Council.
 - (d) The Contractor shall ensure that where hoardings are provided, they are painted on the side facing away from the working area in a colour and style to be approved by tie and The City of Edinburgh Council and include identification of the project and contact information.
 - (e) All hoardings shall be maintained by the contractor in a neat and tidy condition.
 - (f) The Contractor is expressly prohibited from displaying or allowing to be displayed any advertisement, notice, etc including illicit bill or fly posting on the hoardings. The Contractor shall ensure that all graffiti, fly posting or defacement to the hoardings is removed and made good or obscured within 24 hours.
 - (g) An information board shall be provided at each working area detailing information on the work programme and estimated duration of the works, together with the location of the Information Centre, the web address and a 24 hour telephone number for use by members of the public who wish to lodge complaints or comments (see Section 2).
 - (h) All fencing and hoarding shall be removed as soon as reasonably practicable after the completion of work.

4.3 Lighting & Visual Intrusion

- (a) Lighting shall be removed as soon as is consistent with the safe and efficient operation of each work site.
- (b) Site lighting shall be positioned and directed as so to minimise nuisance to residents and to minimise distractions or confusion to passing drivers on adjoining public roads. This provision will apply particularly to working areas where work after dark will be carried out and the Contractor shall provide appropriate lighting for these sites.
- (c) So far as is practicable, all power to temporary traffic signals, lighting etc shall be taken from mains supplies rather than from portable generators. Where portable generators are used industry best practice will be followed to minimise noise and pollution from such generators.

- (d) The Contractor shall comply with the Institute of Lighting Engineers document *Guidance Notes on Reduction of Light Pollution 2000* in so far as is reasonably practicable and applicable to the construction works.

4.4 Access and Loading

- (a) Lorries shall enter and exit the site in a forward direction at designated locations, except where space restriction does not permit this. If the reversing of vehicles into public spaces is required, then the movement shall be properly controlled by a responsible person(s) observing the rear of the vehicle. The sounding of audible reversing alarms shall not be permitted outside normal working hours, except where this has been approved by The City of Edinburgh Council in connection with works permitted under Clause 3(c). Entry/exit conditions shall be subject to prior approval by The City of Edinburgh Council before implementation.
- (b) All loading and unloading of vehicles shall take place off the public road as far as is reasonably practicable.

4.5 Security

- (a) Adequate security shall be exercised by the Contractor to protect the public and prevent unauthorised entry to or exit from the site. Site gates shall be closed and locked when there is no site activity and site security measures shall be implemented.
- (b) Site security cameras, where used, shall be placed in locations which will not unduly infringe upon the privacy of local residents.

4.6 Living Accommodation

No living accommodation shall be provided within any construction working area . Mess rooms, locker rooms, toilets and showers will be permitted.

4.7 Clearance of Site on Completion

- (a) The Contractor shall clear and clean all working areas and accesses as work proceeds and when no longer required for the carrying out of the works.
- (b) All surplus soil and materials, temporary roads and hard standings, plant, sheds, offices and temporary fencing shall be removed, post holes filled and the surface of the ground restored as near as practicable to its original condition, or to such condition as has previously been agreed with tie and The City of Edinburgh Council.

4.8 Pest Control

The Contractor shall ensure that the risk of infestation by pests or vermin is minimised by adequate arrangements for the disposal of food waste or other material attractive to pests. If infestation occurs he shall take such action to deal with it as required by The City of Edinburgh Council.

5 Roads, Footpaths, Cycleways and Bridleways

5.1 General

The Contractor shall submit to **tie**, The City of Edinburgh Council, Lothian and Borders Police and the Emergency Services a statement setting out the proposed measures (including specified traffic routes) to be taken with respect to traffic and road safety for the duration of the contract, for approval before the relevant work commences. The Contractor shall circulate the approved statement to other bodies identified by The City of Edinburgh Council.

The measures to be taken with respect to traffic and road safety shall include but not necessarily be limited to:

- a) Use of Temporary Traffic Regulation Orders (TTROs). The Contractor shall consult with **tie** and The City of Edinburgh Council on the arrangements for agreeing and implementing Temporary TROs to facilitate road closures etc. The use of Temporary TROs shall take into account the requirement for, and availability of suitable alternative routes.
- b) Use of temporary signing and lining where required by The City of Edinburgh Council to identify places where construction is taking place.
- c) Use of temporary signing to restrict vehicle type/sizes and define routes for construction traffic.
- d) Use of appropriate temporary signing and lighting wherever works are in progress to ensure the safety of all road users.
- e) Preparation and implementation of a programme agreed with The City of Edinburgh Council for road closures and temporary traffic signal arrangements.

5.2 Temporary Road Closures and Diversions

It will be necessary to close or divert certain specified roads, footpaths and cycle ways in order to construct the Edinburgh Tram. These closures may be temporary during the construction period, or they may be permanent and form part of the Edinburgh Tram Scheme.

Details of the locations of the proposed permanent closures and diversions are shown on the deposited plans and sections relating to the Edinburgh Tram. It is the Contractor's responsibility to undertake the construction works for these closures and diversions and will reach agreement with The City of Edinburgh Council to suit his programme of works.

Before breaking up, closing or otherwise interfering with any street or footpath to which the public has access, the Contractor shall make such arrangements with The City of Edinburgh Council as may be reasonably necessary to cause as little interference with the traffic in that street or footpath during the construction works as shall be reasonably practicable.

Temporary road closures that result in the diversion of bus routes should be notified to bus operators who will in turn notify the Traffic Commissioner. The temporary suspension or relocation of Bus Stops is the responsibility of the bus operators.

Pedestrian access to properties shall be maintained at all times where practicable unless otherwise agreed with The City of Edinburgh Council and the owners and tenants of affected properties. Access to and from public facilities shall be maintained at all times unless otherwise agreed with the administering bodies.

Wherever the Edinburgh Tram works interfere with the existing public or private roads or other ways over which there is a public or private right of way for any traffic, the Contractor shall construct diversion ways as necessary. The standard of construction and lighting shall be suitable in all respects for the class or classes of traffic using the existing ways and the widths of the diversions shall not be less than that of the existing way unless otherwise agreed with The City of Edinburgh Council or the owner of the private road.

Diversion routes shall be constructed in advance of any interference with the existing ways, be kept as short as reasonably practicable and be maintained by the contractor to provide adequately for the traffic flows and volume. All diversion routes shall be removed and the road returned to The City of Edinburgh Council as soon as is reasonably practical after completion of the Contractor's works. Liaison shall be undertaken with The City of Edinburgh Council regarding any special events such as the Edinburgh Festival, Christmas, New Year, sporting events, filming etc which might interact with the diversions.

A horizontal clearance of 0.6 metres shall be provided from the kerb line, to avoid fouling by road vehicles. The minimum headroom beneath any projection over the road shall be 5.3 metres.

5.3 Parking Provision for Construction Traffic

Areas/locations of parking provision for site and construction traffic shall be agreed with The City of Edinburgh Council prior to the commencement of works.

No daytime or overnight parking of site or construction vehicles outside any construction compounds or work sites shall be allowed except where the delivery or removal of materials is taking place at that location and with prior agreement with The City of Edinburgh Council.

5.4 Pedestrian and Cycle Routes and Bridleways

The Contractor shall ensure that all existing pedestrian and cycle routes and Bridleways are maintained throughout the construction period unless otherwise agreed with The City of Edinburgh Council. Any temporary replacement footway or cycleway shall meet the following requirements:

- (a) All temporary and diverted footways, which replace footways that are currently accessible to wheelchairs and pushchairs, shall continue to be usable by such users where reasonably practicable and take into account DDA access requirements..
- (b) Tactile paving shall be used where present on existing pedestrian facilities unless otherwise agreed with The City of Edinburgh Council.

- (c) Any temporary footways/ cycle ways shall have uniform surfaces. There shall be no steps and any longitudinal gradients shall be preferably 1 in 20 and no greater than 1 in 12. Cross falls should be suitable for disposal of surface water run off but should not exceed 1 in 30 where reasonably practicable.
- (d) Ramps shall be provided at all junctions of footways and cycle ways with carriageways. Gradients shall not exceed 1 in 12 and the base of the ramps shall be flush with the carriageway. All temporary footways and cycle way ramps shall be surfaced in non-slip material and kept free from mud and debris.
- (e) Existing footway/cycle way widths shall be maintained where practicable. Footway/cycle way widths shall not be reduced without the prior agreement and approval of The City of Edinburgh Council.
- (f) Clear signing and protection measures shall be provided at all times for each pedestrian/cycle route or bridleway affected by the works in accordance with Chapter 8 of the Traffic Signs Regulations and General Directions 1981 and relevant safety legislation. The Contractor shall liaise and agree the signing requirements of all pedestrian/cycle routes affected by the works with The City of Edinburgh Council, and shall provide any additional signage and/or protection measures required and agreed with The City of Edinburgh Council.
- (g) Headroom clearance over footways and cycle ways shall be a minimum of 2.3 metres. A horizontal clearance of 0.6 metres shall be provided from the kerb line, where practicable, for any hoarding to avoid fouling by vehicles. The minimum headroom beneath any projection over the road shall be 5.3 metres, but will be higher on abnormal load routes. Where a path is a designated bridleway, headway clearance shall be a minimum of 3.6 metres. All pedestrian routes diverted onto the carriageway shall be clearly defined by continuous solid barriers, constructed to the reasonable requirements of The City of Edinburgh Council.

5.5 Maintenance and Repair of the Road

The Contractor shall carry out a pre-construction inspection and take photographs of the roads, footways and cycle ways in the vicinity of the Site in conjunction with The City of Edinburgh Council. The Contractor shall produce a report of the results of the joint inspection. The report shall establish the general road conditions within and in the vicinity of the Site and the level of reinstatement required. The report shall be agreed and signed by both the Contractor and The City of Edinburgh Council or the road proprietor – as appropriate

The Contractor shall take every reasonable precaution to prevent his operations from unnecessary damage to the roads and footpaths within the site and in the vicinity of the Edinburgh Tram works.

The Contractor shall carry out all maintenance works as are necessary to maintain the roads and footpaths affected by the works in a safe and serviceable condition to the satisfaction of the reasonable requirements of The City of Edinburgh Council.

5.6 Existing Street Furniture

No street furniture or other features within the vicinity of the Site and construction works, but outside the area covered by the Edinburgh Tram Acts of the Scottish Parliament, shall be unnecessarily disturbed or altered by the works. Any damage to street furniture consequent upon construction activities connected with the Edinburgh Tram shall be reported to tie and the appropriate owner or authority (unless the appropriate owner can not be identified) immediately on discovery of the

damage. Any damage shall be replaced or made good as soon as practicably possible and to the reasonable satisfaction of the owner of the street furniture or other feature.

Any street furniture or other obstructions outside the area to be occupied by the Contractor but which are required to be moved in order to gain access to the Site shall, subject to the prior consent of the owner thereof, such consent not to be unreasonably withheld, be removed and reinstated/replaced as appropriate, on completion of the works.

5.7 Lorry Movements and Access to sites

The Contractor and his sub-contractors and suppliers moving loads, construction plant, materials and spoil (including vehicles used for carrying such when empty) shall limit the use of the public roads for such purposes as far as reasonably practicable.

All site access routes shall be agreed with The City of Edinburgh Council prior to the commencement of the relevant works.

Vehicles arriving or leaving the Site shall do so during the normal working hours as specified in Section 3 (a) of this Code unless otherwise agreed with The City of Edinburgh Council. Access (which is deemed to include both the route and entrance to any work site) by lorries shall be as agreed with The City of Edinburgh Council and the Lothian and Borders Police.

The Contractor shall take all reasonable measures to ensure that delivery vehicles do not remain stationary on the road unnecessarily prior to entering the Site. In exceptional circumstances, for example where the site is very constrained, it may be necessary to have the potential for a limited number of vehicles to stand on the road. The location of such standing areas their size and the duration of any standing periods shall be subject to prior agreement with The City of Edinburgh Council and the Lothian and Borders Police.

The Contractor shall ascertain and comply with any restrictions in respect of abnormal load routes as they may affect access to the Site.

5.8 Mud on Roads

The Contractor shall take strict measures to minimise the spillage of mud and loose materials on roads arising from excavation works. These will include, but not necessarily be limited to:

1. The provision of easily-cleaned hard standings for vehicles entering, parking and leaving the Site or construction compound.
2. The provision of wheel washing facilities at construction compounds, including, where practicable, mechanical wheel spinners, adequate provision for drainage via settlement tanks and regular maintenance of settlement tanks.
3. The use of mechanical road sweepers and surface flushing apparatus to clean the hard standing and to remove any mud or debris deposited by site vehicles on roads, footpaths, and in gullies or drains in the vicinity of the site. The road sweepers or other equipment are to be readily available whenever the need for cleaning arises.
4. The Contractor shall ensure that vehicles are loaded and sheeted in such a manner as to prevent material falling off during their journey..
5. The Contractor shall also comply with the requirements regarding the control of dust outlined elsewhere in this Code.

5.9 Provision, Erection and Maintenance of Traffic Safety and Control (Traffic Safety Measures)

The Contractor shall provide, erect and maintain such traffic signs, road markings, lamps, barriers and traffic control signals and such other measures as may be necessitated by the construction of the Edinburgh Tram works in accordance with the requirements of the Contract and to the approval of The City of Edinburgh Council. The Contractor shall not commence any work that affects the public road until all traffic safety measures necessitated by the work are fully operational.

The Contractor shall keep clean and legible at all times all traffic signs, road markings, lamps, barriers and traffic control signals and shall position, replace, reposition, cover or remove them as required by the progress of the works and to the reasonable requirements of The City of Edinburgh Council.

So far as practicable, all power to temporary traffic signals, lighting, etc. shall be taken from mains supplies rather than from portable generators. Where portable generators are used all reasonable measures will be taken to minimise noise and pollution from such generators.

5.10 Implementation of the Closure of Roads and Access to Frontages

The Contractor shall not close any road or private accesses until immediately before the area is required for construction in accordance with the Contract and the agreed programme of works. The construction of the works shall follow in the area of a temporary closure expeditiously and shall be carried out efficiently and in a continuous manner to ensure that all temporary closures are re-opened as quickly as possible.

The Contractor shall, in carrying out the Edinburgh Tram works, take all reasonable precautions to prevent or reduce any disturbance or inconvenience to the owners, tenants or occupiers of adjacent properties, and to the public generally. The owners, tenants or occupiers of affected properties shall be informed of the works to be undertaken, their planned duration, road and access closures and alternative access routes (where required) in writing and by locally posted public notices at least one calendar month prior to work starting.

5.11 Access for Emergency Vehicles

Routes for emergency service vehicles and personnel to gain access to work sites, the construction corridor and neighbouring sites along the route shall be agreed with the emergency services and The City of Edinburgh Council prior to the start of construction.

6 Noise

6.1 Noise Control

(a) The Contractor shall have a general duty to take all practicable measures to minimise nuisance from noise. The noise limits specified in this section or which may be otherwise agreed with The City of Edinburgh Council shall not be regarded as a licence to make noise up to the stated limit.

(b) Subject to the specific requirements of The City of Edinburgh Council, the following minimum requirements shall be met:

(i) During normal working hours, as defined in Clause 3 (a), the maximum noise levels measured 1 metre from any occupied dwelling or other building used for residential purposes, generated by construction plant and equipment shall not exceed the following limit:

Monday to Saturday (inc.)	0700-1900 hours	$L_{Aeq\ 12\ hour}$ 75 dB
---------------------------	-----------------	---------------------------

(ii) Outside normal working hours, the following limits shall apply:

<i>Period</i>	<i>Hours</i>	<i>Limit</i>
Monday to Saturday (inc.)	1900-2200	$L_{Aeq\ 3\ hours}$ 65 dB
Sunday & Bank Holidays	0800-2000	$L_{Aeq\ 12\ hours}$ 65 dB

The default noise limit for any night-time (2200 to 0700 hours) construction work shall be $L_{Aeq\ 1\ hour}$ 55dB at residential buildings. Higher noise levels may be permitted where ambient noise levels are higher.

(iii) The maximum noise levels measured 1 metre from any school, college or other teaching facility resulting from construction work shall not exceed the following limits:

At any time when occupied	$L_{Aeq\ 1\ hour}$ 65 dB
---------------------------	--------------------------

(iv) The maximum noise level measured 1 metre from any office building or other building used for office purposes during normal working hours shall be as defined in paragraph (b)(i) of this clause.

(c) In order to ensure that the best practicable means are used to meet the levels set out above, a programme of on-site monitoring by a suitably qualified practitioner shall be agreed between the Contractor, **tie** and The City of Edinburgh Council. This monitoring programme shall include the location and frequency of readings and will define to whom the results shall be made available. Monitoring will be undertaken at locations identified in the Environmental Statements as those where mitigation measures may be necessary to avoid significant noise disturbance.

(d) In exceptional difficult circumstances essential work causing noise above these limits may be permitted with the prior approval of **tie** and The City of Edinburgh Council. Application for prior approval must be made at least two weeks in advance of the relevant works commencing,

-
- and must be fully justified and kept to the minimum necessary. Conditions may be attached to any permission for such works.
- (e) In the event that measurements indicate noise has exceeded the limits in paragraph (b) of this clause the Contractor shall stop the operation in a safe manner and take all practicable measures to prevent recurrence. If this does not enable the limits to be met exceptional permission must be applied for under the terms of paragraph (b) of this clause.
- (f) Without prejudice to the other requirements of this Section, the Contractor shall comply with the recommendations set out in BS 5228 '*Noise Control on Construction and Open Sites*' insofar as these are reasonably practicable and applicable to the construction works and in particular with the following requirements:
- (i) All vehicles and mechanical plant used for the purpose of the work shall be fitted with effective exhaust silencers and shall be maintained in good and efficient working order.
 - (ii) All compressors and generators shall be 'sound reduced' models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use, and all pneumatic percussive tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers.
 - (iii) All machines in intermittent use shall be shut down in the intervening periods between work or throttled down to a minimum. Noise emitting equipment which is required to run continuously shall be housed in a suitable acoustic enclosure (see BS5228 Part 1:1997, Figures B.1, B.2 and B.3 (or later issue)).
 - (iv) Stationary equipment with significant noise output shall be sited away from sensitive site boundaries as far as is practicable.
 - (v) Temporary noise barriers shall be used to reduce noise levels where appropriate and practicable. Barriers shall be located as close to the plant as possible, and shall have a mass per unit area of at least 7kg/m^2 .
 - (vi) No deliveries shall arrive at the site before 0700 hours.
 - (vii) The engines of all parked vehicles or vehicles waiting to enter any work area shall be switched off within two minutes of arrival.
 - (viii) Work compounds shall be laid out so that accesses and loading areas are located as far away from sensitive neighbours as practicably possible and so that temporary structures screen noisy areas where practicable.
- (g) Without prejudice to this Section, the Contractor shall comply with the City of Edinburgh Department of Environmental and Consumer Service's document *Construction Site Noise: A Guide for Contractors*, August 2000 (or current issue, if subsequent amendments issued), and shall liaise with that department in accordance with the requirements therein.

7 Vibration

7.1 Vibration Control

- (a) Subject to the specific requirements of The City of Edinburgh Council, the following minimum requirements shall be met:
- (i) To protect residents and users of buildings from nuisance and harm the Contractor shall, as far as practicable, not exceed the Vibration Dose Values specified in BS6472:1992 as resulting in a 'low probability of adverse comment'.
 - (ii) To protect buildings and other structures from physical damage, peak particle velocity levels shall not exceed 5mm/sec except for particularly sensitive buildings or structures where the level shall not exceed 3mm/sec. If vibration levels are predicted to exceed the criteria specified then vibration monitoring will be undertaken by a suitably qualified practitioner during the activity and the contractor will adopt alternative methods of working to reduce vibration levels as necessary. The monitoring programme shall be agreed between the Contractor, **tie** and The City of Edinburgh Council. This programme will include the location and frequency of readings and will identify to whom the results should be made available.
- (b) In order to ensure that these levels are not exceeded a programme of on-site monitoring by a suitably qualified practitioner shall be agreed between the Contractor, **tie** and The City of Edinburgh Council. This programme will include the location and frequency of readings and to whom the results should be made available and as a minimum shall cover all locations identified as 'significantly affected' in the Environmental Statement.

7.2 Inspection of Buildings and Other Structures

- (a) All buildings or other structures, including scheduled monuments and listed buildings that are located within Edinburgh Tram working areas, or which are located directly adjacent to such working areas, which may be at risk of physical damage or damage caused by vibration generated during the construction works, shall be listed in a schedule compiled by the Contractor. The said schedule is to be subject to agreement with the City of Edinburgh Council, the Council having the power to add, or subtract, buildings from the Schedule as they deem fit. The agreed schedule is to be published in accordance with the requirements of Section 2.1 of this Code. A notice of inclusion within the schedule is to be delivered to each scheduled building, attachment of a notice to the building shall be sufficient evidence that notice has been served. Subject to the granting to the Contractor of free and unhindered access to the building or structure, a record of the condition and survey of any defects in the building or structure shall be prepared prior to the commencement of any construction works associated with the Edinburgh Tram. Certified copies of the building record and condition survey shall be made available free of charge by the Contractor to the owners of the examined buildings or structures, on their presentation of proof of title to the building. The best practicable means shall be undertaken by the Contractor to avoid damage, or to minimise damage where it is unavoidable. The condition of the buildings and other structures listed in the schedule shall be monitored at reasonable intervals during the Edinburgh Tram works and for a period of one year after the completion of the said works. The results of the aforesaid

monitoring shall be made available free of charge by the Contractor to the owners of the examined buildings, on their presentation of proof of title to the building.

- (b) The results of this record of the conditions and survey of any defects shall be provided to The City of Edinburgh Council, the property owner and occupier and in the case of scheduled or listed features, to The City of Edinburgh Council and Historic Scotland.
- (c) After the construction works have been completed and at any time up to two years after the opening of the tramway the owners of properties identified under the provisions of 7.2 (a) of this Code may, upon providing reasonable evidence of damage, request that a second defects survey is undertaken. Any damage that is identified as being caused by construction of the tram system shall be repaired within a reasonable time of identification at the expense of the Contractor to the reasonable satisfaction of the property owner and such that the property is returned to the standard of repair and stability existing before construction works on the Edinburgh Tram commenced.

8 Dust and Air Pollution

8.1 Dust and Other Air Pollution

- (a) The Contractor shall take all necessary measures to avoid creating a dust nuisance during construction and demolition works.
- (b) Measures to prevent dust shall include the following:
 - (i) The provision of easily-cleaned hard standings for vehicles
 - (ii) The enclosure of material stockpiles at all times and damping down of dusty materials using water sprays during dry weather.
 - (iii) The hard surfacing of heavily-used areas which will be kept clean by regular brushing and water spraying.
 - (iv) Control of dust released from cutting or grinding of materials on site. Any mobile crushing plant that is used during construction must be appropriately licensed and sited so as to minimise dust annoyance to any persons who may be liable to be affected by emissions. The Scottish Environment Protection Agency (SEPA) shall be notified in advance of any mobile crushing plant being brought onto site. All reasonable measures will be taken to minimise on-site cutting.
 - (v) The complete sheeting of all vehicles carrying spoil and other dusty materials.
 - (vi) Watering of unpaved surfaces and roads.
 - (vii) A limit on vehicle speeds on unpaved surfaces of 20 kph.
- (c) Where dust generating works (e.g. excavation, demolition) are undertaken close to buildings such that there is a potential for soiling of windows and ledges with dust the contractors shall clean those windows and ledges as necessary – and at least weekly - during periods of dust generating work and on completion of works the contractor shall take precautions to prevent damage occurring as a consequence of cleaning works..
- (d) The Contractor shall take precautions to prevent the emission of smoke or fumes from construction vehicles, site plant and stored materials including volatile substances. Vehicles and plant shall be well maintained and measures shall be taken to ensure that engines and motors are not left running for long periods when not directly in use.
- (e) The engines of all parked vehicles or vehicles waiting to enter any work area shall be switched off within two minutes of arrival.
- (f) Work compounds shall be laid out so that accesses and loading areas are located as far away from sensitive neighbours as practicably possible and so that temporary structures screen noisy areas where practicable.
- (g) There shall be no burning of waste on site.

9 Disposal of Waste and Contaminated Materials

9.1 Waste

- (a) The Contractor will develop a Waste Management Plan in accordance with Site Waste Management Plans: Guidance for Contractors and Clients (DTI 2004). This shall in particular identify:
- responsibilities for waste management;
 - the types and quantities of waste materials likely to be generated;
 - measures to be taken to minimise generation of waste;
 - proposals for recycling and/or re-use;
 - measures to be adopted for management of waste on site including enclosure, segregation, secure storage, sorting for recovery, and other on-site handling;
 - proposed treatment and disposal routes;
 - licensing arrangements.
- (b) The plan shall be developed in accordance with the principles set out in Scotland's National Waste Plan, 2003 and in consultation with SEPA and The City of Edinburgh Council.
- (c) The Contractor shall undertake monthly audits to demonstrate compliance with statutory requirements and the Waste Management Plan and shall provide copies of the audit report to **tie**. Their audit programme shall be set out in the Waste Management Plan.
- (d) Spoil or other waste materials arising from the works shall, wherever reasonably practicable, be used in the works.
- (e) The disposal of waste, including any surplus spoil, shall be managed so far as is reasonably practicable, to maximise the environmental and development benefits from the use of surplus material to minimise the removal of surplus spoil from site and to reduce any adverse environmental effects of disposal.

9.2 Contaminated Land and Materials

- (a) The Contractor shall identify all areas within the Site where contaminated land including land contaminated by invasive alien species listed on *Schedule 9, Part II of the Wildlife and Countryside Act 1981 and amendments*, may be encountered. In each of these areas the contractor shall:
- (i) carry out appropriate site investigations to the satisfaction of **tie** and The City of Edinburgh Council to determine the extent and type of contaminants present on the site;
 - (ii) identify potential sources, pathways and receptors and assess the risk of harm to receptors;
 - (iii) liaise with the Local Authority and SEPA to address their reasonable requirements and agreeing control or protection measures necessary for dealing with identified risks;
 - (iv) obtain any necessary licences for the storage, treatment and disposal of contaminated material (including dewatering discharge);

-
- (v) ensure that removal and disposal of contaminated materials complies with a strict consignment note system and that delivery is to appropriately licensed disposal facilities.
 - (b) The Contractor shall develop management procedures to be followed in the event that contaminated or hazardous materials are discovered on site during construction.
 - (c) If contamination that has not been previously identified is encountered on site, no further development shall take place (except to the extent that would not disturb that contamination) until a site investigation is carried out in accordance with paragraph (a) of this clause.
 - (d) The Contractor shall comply with the guidance in HSE *Protection of Workers and the General Public during the Development of Contaminated Land* 1991 and to the DEFRA *Helping to Prevent the Spread of Invasive Non-native Species Horticultural Code of Practice* March 2005 in so far as this is reasonably practicable and applicable to the construction works. Invasive alien species listed on Schedule 9, Part II of the Wildlife and Countryside Act 1981 as amended by the Nature Conservation (Scotland Act) 2004, will be treated in accordance with the Environmental Protection Act 1990. Japanese knotweed and giant hogweed and soils containing particles of these plants are regarded as controlled waste.
 - (e) Appropriate precautions must be taken if materials containing asbestos are encountered. The contractor will observe the exposure limits and measurement methods for asbestos, set out in HSE Guidance Note EH 10 1988 and shall comply with HSE Guideline Note MS13 Asbestos 1988, the Health and Safety Commission Approved Code of Practice and Guidance Note Work with Asbestos Insulation and Asbestos Coating 1983 in so far as these are applicable to the construction works.

10 Protection of the Water Environment

10.1 Waste Water and Run-off

- (a) The Contractor shall prepare and implement a Construction Site Drainage Plan (the Plan) in consultation with SEPA. The Plan shall include measures to ensure that surface water runoff is contained and managed appropriately and that appropriate measures are taken to respond to inundation of the site. Sustainable Drainage (SuDS) measures shall be included within the works where reasonably practicable and applicable, in accordance with the guidance in:
- Interim Code of Practice for SuDSu (CIRIA 2004);
 - Sustainable Urban Drainage System – Design Manual for Scotland and Northern Ireland (CIRIA C521);
 - Sustainable Urban Drainage Systems – Best Practice Manual (CIRIA C523).
- (b) There shall be no washout from temporary construction laydown and storage areas into local watercourses.
- (c) No water containing silt shall be pumped directly into watercourses but shall be stored in settlement lagoons or tanks, or filtered prior to discharge, or discharged onto a grassy area to soak away, or discharged to foul sewer.
- (d) Waste water and site discharges to surface water or sewer shall only be permitted where the effluent quality and discharge location is acceptable to SEPA or Scottish Water (as appropriate). COPA discharge consent shall be obtained if required prior to discharge.
- (e) The Contractor shall ensure that all treatment facilities are regularly inspected and maintained and that a full record is kept of inspection, maintenance and other measures to maintain equipment performance.
- (f) Approval from SEPA shall be obtained prior to any excavation below the water table, including any site de-watering and discharge. Application for prior approval must be made at least two weeks in advance of the relevant works commencing. Cut-off ditches may be used to prevent water from entering excavations.
- (g) The Contractor shall comply with BS 6031: 1981 Code of Practice for Earthworks, regarding the general control of site drainage is so far as these are applicable to the construction works.
- (h) The Contractor shall ensure that areas of exposed ground and stockpiles are minimised to reduce silty runoff. Geotextiles or other equivalent measures shall be used where necessary to prevent silty run-off from soil mounds close to watercourses.
- (i) The Contractor shall ensure that any water that has come into contact with contaminated materials is disposed of in accordance with the requirements of SEPA or Scottish Water (as appropriate).
- (j) The Contractor shall take suitable precautions to prevent the entry of pollutants into any bodies of water and report any incidents to SEPA and Scottish Water

- (k) Procedures for responding to potentially polluting incidents or inundation of the site by floodwaters shall be implemented in accordance with SEPA Guidance (see Section 10.6).

10.2 Storage of Polluting Materials

- (a) The Contractor shall make provisions to ensure that oil drums and containers or other potential contaminants stored on the site are properly isolated and bunded and that no oil or other contaminants are allowed to reach watercourses or groundwater, including aquifers. Oil storage containers with a 200 litre capacity or greater shall be stored in compliance with the *Control of Pollution (Oil Storage) (Scotland) Regulations 2003 (Draft)* insofar as these are reasonably practicable and applicable to the construction works. Drip trays and other secondary containment measures will be used where necessary to prevent spills during refuelling of small static and mobile equipment. Storage locations for such materials shall be positioned away from watercourses. All surface water or other contaminated water which accumulates in bunds shall be removed by manually controlled positive lift pumps and not by means of a gravity drain.
- (b) Spill response kits containing equipment appropriate to the quantity and types of materials present on site shall be available for use in the event of a fuel spillage. Personnel shall be trained in their use.

10.3 Protection of Aquifers

- (a) The Contractor shall have due regard for protection of underlying aquifers and adhere to the SEPA's Groundwater Protection Policy for Scotland. In all instances, measures to ensure appropriate protection of aquifers will be undertaken subject to prior approval of SEPA. Prior approval shall be sought in writing, prior to commencement of the relevant tram works.

10.4 Control and Management of Foul Drainage

Where permanent facilities are not accessible foul water and sewage effluents produced by the construction workforce shall be contained by temporary foul drainage facilities. All foul water so collected will be disposed of off-site by a licensed contractor.

10.5 Works in the Vicinity of Water

The Contractor shall take suitable precautions to prevent the entry of pollutants including sediments and dusts into any bodies of water and report any incidents to SEPA.

Crossings of watercourses shall be designed and constructed so as not to impede the flow, obstruct the movement of floodwater or exacerbate erosion of the channel and banks.

In watercourses that support migratory fish, works shall be avoided during upstream and downstream fish migration, spawning, incubation and hatching periods.

Where bankside habitat is temporarily affected, it shall be reinstated to its original form on completion of the works.

Areas of bankside adjacent to Working Areas shall be fenced off during construction to prevent damage to the banksides.

Stripping of surface vegetation near water shall be kept to a minimum. Exposed surfaces shall be seeded or reinstated with vegetation as soon as is practical after construction in that Working Area is complete.

Where culverting is required, it shall be designed and constructed to permit the passage of fish and other aquatic fauna under normal flow conditions

10.6 Guidance

The Contractor shall comply with all relevant SEPA Pollution Prevention Guidelines, these will include, but not necessarily be limited to:

- PPG1 General guide to the prevention of water pollution.
- PPG2 Above ground oil storage tanks.
- PPG3 The use and design of oil separators.
- PPG4 Disposal of sewage where no mains drainage is available.
- PPG5 Works in, near or liable to affect watercourses.
- PPG6 Working at construction and demolition sites.
- PPG7 Refuelling facilities
- PPG8 Storage and disposal of used oils.
- PPG13 High pressure water and steam cleaners.
- PPG18 Control of spillages and fire fighting runoff.
- PPG19 Garages and vehicle service centres.
- PPG21 Pollution incident response planning.
- PPG22 Dealing with spillages on roads.
- PPG23 Maintenance of structures over water.
- PPG26 Pollution prevention storage and handling of drums and intermediate bulk containers.

10.7 Water Environment and Water Services (Scotland) Act 2003

The Contractor should be aware that new licensing requirements under the Controlled Activity Regulations (currently in draft) may come into force prior to or during the construction programme and will affect many activities in or around water. The contractor shall make best endeavours to inform himself of the date that these Regulations come into force.

11 Ecology

11.1 Encroachment into Wildlife Areas

- (a) The Contractor shall:
- (i) take all reasonably practicable measures to minimise harm to and disturbance of wildlife caused by noise and vibration, dust and other air pollution.
 - (ii) minimise habitat loss by keeping the working corridor and extent of working areas to the minimum necessary for the works. Removal of habitats and new planting shall be undertaken in consultation with Scottish Natural Heritage (SNH) and the Local Authority.
 - (iv) fence off adjacent habitat to prevent unnecessary incursion or damage. Staff shall be made aware of the need to avoid damage to adjacent retained areas.
 - (v) areas of habitat disturbed during construction in areas not required for permanent works shall be reinstated or replaced on completion of the works in accordance with the Landscape and Habitat Management Plan (LHMP).
 - (vi) soil stripping, storage and placing shall comply with the guidelines set out in British Standard (BSI Code of Practice for Earthworks (BS6031).
- (b) Approval shall be obtained from **tie**, SNH, SEPA, Scottish Executive Environment Group Wildlife Habitats Division (SEEG WHD) and The City of Edinburgh Council, for detailed method statements for any works proposed in designated sites, including Special Protection Areas (SPA)/Ramsar sites, Sites of Special Scientific Interest (SSSI), Sites of Interest for Nature Conservation (SINC) and Wildlife Sites.

Applications for approval shall be made at least one calendar month prior to relevant works commencing.

11.2 Protected Species

- (a) In advance of any works, the Contractor shall employ suitably qualified professionals to check all working areas and any land within 30 metres of the boundary of the working area (or 100m from any piling operations or use of explosives) for the presence of protected species (as defined by statute.) Where protected species are identified, appropriate mitigation measures shall be agreed in advance with the relevant authorities and in accordance with any requirements for licensing, and these measures shall be implemented. The Contractor shall be responsible for obtaining any required licences from the relevant authority.
- (b) Where any habitat has to be cleared in the breeding bird season, typically March – June/July for most species, the habitat must be checked prior to removal for the presence of nesting wild birds, their nests and eggs/young. If found, no habitat can be removed until nesting is complete, or unless other suitable mitigation is agreed in advance with SNH.

- (c) The Contractor shall be responsible for obtaining a licence from SNH for any work that may cause disturbance to a badger or involves the damage or destruction of a sett. Licence applications shall be made for any works within 30m, and for piling or use of explosives within 100m, and no works shall proceed until the required licences are obtained. Alternative setts shall be provided in the event of and in advance of any loss
- (d) The Contractor shall be responsible for obtaining a licence from SEEG WHD for any work which may cause disturbance to otters or involve damage or destruction to an otter holt or lying up site or if any works are proposed within 30m of an otter holt or lying up site. Alternative holts or lying-up sites shall be provided in the event of and in advance of any loss
- (e) All bridges and other built structures and mature and dead trees within the working area shall be checked by a licensed bat handler for their use by roosting or hibernating bats prior to felling or other potentially damaging operations. If found, mitigation measures shall be agreed with SNH and SEEGWHD and implemented, including review of the design to seek ways of avoiding loss of the roost. If avoidance is not possible, a licence shall be applied for from SEEGWHD for disturbance to a European Protected Species and/or destruction or damage to a breeding site or resting place. Alternative roost sites shall be provided in advance of any loss. Any loss of feeding habitat shall be compensated for by new habitat creation as detailed in the LHMP. All mitigation measures for protected species shall be installed as early as possible during the construction process so that use can be established at an early stage.

Where appropriate use of mitigation measures by target species will be positively encouraged using a variety of techniques e.g. feeding.

- (f) Permanent mitigation structures for protected species including mammal fencing and tunnels and artificial badger setts shall be checked during construction and approved on completion by a suitably qualified ecologist and reported to SNH. Should these structures not be to the required standard specified, remedial measures will be taken by the contractor.
- (g) Mitigation shall aim to compensate for loss of foraging specifically for badgers through creation of appropriate grassland and scrub habitat in line with the Civil Aviation Authority Advice Note 3 – Potential Bird Hazards from Amenity Landscaping and Building Design
- (e) Contractor personnel shall be briefed by a suitably qualified professional on measures for protected species as part of site induction.

11.3 Protection of Mature Trees

For the purposes of this Code, “trees” are defined as trees with a diameter of over 10cm girth at a height of 1.5 m above ground level.

- (a) Loss of trees shall be avoided as far as reasonably practicable. The Contractor shall comply with the guidelines set out in British Standard (BS) 5837:1991 *Trees in relation to construction* insofar as these are reasonably practicable and applicable to the Edinburgh Tram construction and landscaping works.
- (b) All tree surgery operations shall comply with the BS 3998 *Recommendations for Tree Works* and a method statement addressing safety of workers and the public shall be prepared and implemented.

- (c) Felling shall be carried out in accordance with the Forestry Commission's Forest and Water Guidelines 2004, relating to the influence that woodland and trees can have on the freshwater environment, insofar as these are reasonably practicable and applicable to the construction works.
- (d) Prior to felling, trees suitable as bat roosts shall be checked by a licensed bat handler for roosting and hibernating bats and should any be identified required licences and mitigation measures shall be agreed with the SNH and SEEGWHD.
- (e) Woody material generated should be retained on site as far as is reasonably possible and used as part of habitat creation measures
- (f) Adverse effects on all trees within or in the vicinity of the site shall be minimised by the adoption of suitable mitigation measures. These may include but are not limited to the following:
- (i) selective removal of lower branches in an approved manner, to reduce mechanical damage by construction plant;
 - (ii) control of construction activities to minimise compaction of the ground beneath the entire canopy of the tree. No heavy materials or plant shall be stored, and construction traffic movements shall be controlled, by fencing or other means, so as to minimise vehicle movement within the canopy;
 - (iii) the use of matting around the root zone to minimise soil compaction;
 - (iv) the use of chestnut paling around the trunk to prevent damage.

11.4 Tree Replacement

Where trees are removed, damaged or die as a consequence of the construction, they shall be replaced in a ratio of at least two new trees for every old one removed and shall be trees of a broadly similar or approved size and in a location as close as possible to the original position. All tree planting shall be agreed with **tie** and The City of Edinburgh Council and shall be in accordance with the LHMP. The supply, storage, handling, planting and maintenance of new planting shall be undertaken in accordance with the appropriate British Standards, including, but not necessarily limited to;

- (BS5837) *Trees in relation to construction*,
- (BS3998) *Recommendations for Tree Works* and
- (BS4428) *Code of Practice for General Landscape Operations (excluding hard surfaces)*.

11.5 Control of Invasive and Alien Species

If any invasive alien species listed on *Schedule 9, Part II* of the *Wildlife and Countryside Act 1981 and amendments*, are identified along the route, including Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) or Himalayan balsam (*Impatiens glandulifera*), a strategy shall be developed and implemented prior to the construction phase of the project to manage their presence. The strategy will ensure appropriate treatment of invasive alien species in advance of construction in accordance with approved methodology and will prevent the spread of the species within and outside the development area. The soil containing these species or plants thereof shall be dealt with as contaminated material and disposed of in accordance with clause 9.2 of this Code (Contaminated Land and Materials)'

12 Archaeology and Cultural Heritage

12.1 Archaeological and Heritage Mitigation Plan

- (a) In advance of construction the Contractor shall prepare an Archaeological and Historic Mitigation Plan and this shall be submitted to **tie**, Historic Scotland and The City of Edinburgh Council for approval. The scheme will identify the level of mitigation proposed at each site of archaeological or historic significance (as defined by statute and/or Historic Scotland), taking into account the measures outlined in the Environmental Statements. These may include:
- prior archaeological evaluation by trial excavations;
 - a detailed photographic record prior to construction;
 - a watching brief during construction;
 - a detailed standing building survey and salvage;
 - archaeological excavation;
 - preservation in situ;
 - further documentary research and archiving;
 - or other such measures as may be approved.
- (b) No development within or immediately adjacent to an area which is, in the opinion of The City of Edinburgh Council, of known or suspected archaeological importance, shall commence until a scheme to deal with any archaeological remains on the site has been submitted to and approved by The City of Edinburgh Council and implemented. Application for prior approval shall be made at least two calendar months in advance of the relevant works commencing.
- (c) No development within or adjacent to an area which is designated as a Scheduled Ancient Monument shall commence without confirming whether Scheduled Monument Consent is required with Historic Scotland, and where necessary obtaining such consent. The Archaeological and Historic Mitigation Plan will identify the Schedule Ancient Monuments and Listed Buildings that will be affected and will outline the works that can take place in proximity to them and will detail the necessary mitigation.
- (d) All records obtained through the mitigation will be lodged with the National Monuments Record of Scotland (NMRS).
- (e) The Archaeological and Historic Mitigation Plan will outline the appropriate procedures that will be followed should any significant archaeological remains be found during the pre-construction excavations.
- (f) Any archaeological works carried out on site shall be undertaken by a suitably qualified investigating body acceptable to The City of Edinburgh Council. The results shall be provided to the property owner and occupier and in the case of scheduled or listed features, to the City of Edinburgh Council and Historic Scotland.
- (g) The Contractor shall take all reasonable precautions to prevent employees, subcontractors, their employees, or any other persons from removing or damaging any fossils, coins, articles of value or antiquity, structures or other remains or any other thing of archaeological or historical interest during investigations and during all construction works. The Archaeological and Historic Mitigation Plan will outline the legal obligations placed on those who discover portable antiquities or disturb human remains.

-
- (h) The Contractor shall appoint a suitably qualified professional person, to record the condition of all scheduled and listed buildings and structures or parts thereof, within or adjacent to the construction working areas which are identified as at risk from physical damage or vibration. This shall be carried out in accordance with the Institute of Field Archaeologists Standards and Guidance. The results shall be provided to the property owner and occupier and in the case of scheduled or listed features, to the the City of Edinburgh Council and Historic Scotland.
- (i) At least one month prior to commencement of the relevant excavation works, a copy of each survey undertaken under paragraphs (h) of this clause shall be provided to **tie**, the property owner and occupier and in the case of scheduled or listed features, to the the City of Edinburgh Council and Historic Scotland.
- (j) After the construction works have been completed and at any time up to two years after the opening of the tram the above parties may, upon providing **tie** or the contractor with reasonable evidence of damage, request that a second defects survey is undertaken. Any damage that is so identified as being caused by construction of the tram system shall be repaired within a reasonable time of identification at the expense of the Contractor to the reasonable satisfaction of the property owner and such that the property is returned to the standard of repair and stability existing before construction works on the Edinburgh Tram commenced.

12.2 Guidance

- (a) All archaeological investigations, watching briefs or other activities shall be carried out in accordance with guidance from the Institute of Field Archaeologist, particularly – but not necessarily limited to - standards and guidance for:
- field evaluation;
 - excavation;
 - archaeological watching brief;
 - archaeological investigation and recording of standing buildings or structures;
 - collection, documentation conservation and research of archaeological materials;
 - the IFA policy statement on Environmental Protection;
 - the IFA Code of Conduct;
 - the British Archaeologists and Developers Liaison Group Code of Practice.
-

Note

The term 'Best Practicable Means' is defined in Section 72 of the Control of Pollution Act where '*...practicable' means reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to the financial implications*'. The test of Best Practicable Means has been tested in a substantial body of case law relating to statutory nuisance from construction works. It is for this reason that it provides a clear and appropriate test against which to ensure that adequate noise and vibration measures are adopted during the construction phase.

tie have stated that "*The provisions of the code will form part of the Contract for the construction of the Edinburgh Tram i.e. the successful Contractor will be required to comply fully with the code. It should be noted that public interests are also protected by Scottish, UK and EU legislation*".



End